

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. CC-36-1918

C# M#

Confirmation No. 5529

TC/A.U.: 2163

Examiner: Sheree N. Brown

Date: December 9, 2008

MARTIN et al

Serial No. 10/549,365

Filed: September 14, 2005

Title: INFORMATION RETRIEVAL



Full  
AF#

**Mail Stop Appeal Brief - Patents**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner twice/finally rejecting applicant's claim(s).

\$540.00 (1401)/\$270.00 (2401) \$

☒ An appeal **BRIEF** is attached in the pending appeal of the above-identified application

\$540.00 (1402)/\$270.00 (2402) \$ 540.00

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ( )

☐ A reply brief is attached.

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)

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**TOTAL FEE ENCLOSED \$ 540.00**

☐ **CREDIT CARD PAYMENT FORM ATTACHED.**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140**.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of  
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**APPEAL BRIEF**

Sir:

Appellant hereby appeals to the Board of Patent Appeals and Interferences from the  
last decision of the Examiner.

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**TABLE OF CONTENTS**

|        |   |    |
|--------|---|----|
| (I)    | REAL PARTY IN INTEREST .....                      | 3  |
| (II)   | RELATED APPEALS AND INTERFERENCES .....           | 4  |
| (III)  | STATUS OF CLAIMS.....                             | 5  |
| (IV)   | STATUS OF AMENDMENTS.....                         | 6  |
| (V)    | SUMMARY OF CLAIMED SUBJECT MATTER.....            | 7  |
| (VI)   | GROUND OF REJECTION TO BE REVIEWED ON APPEAL..... | 10 |
| (VII)  | ARGUMENT .....                                    | 11 |
| (VIII) | CLAIMS APPENDIX .....                             | 16 |
| (IX)   | EVIDENCE APPENDIX.....                            | 20 |
| (X)    | RELATED PROCEEDINGS APPENDIX .....                | 21 |

" MARTIN et al  
Serial No. 10/549,365

(I) **REAL PARTY IN INTEREST**

The real party in interest is British Telecommunications public limited company, a corporation of the country of the United Kingdom.

(II) **RELATED APPEALS AND INTERFERENCES**

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

" MARTIN et al  
Serial No. 10/549,365

**(III) STATUS OF CLAIMS**

Claims 1-11 are pending and have been rejected. No claims have been substantively allowed. All of rejected claims 1-11 are being appealed.

**(IV) STATUS OF AMENDMENTS**

No amendments have been filed since the date of the Final Rejection. In preparing this Appeal Brief the undersigned noticed that claim 11 improperly contains a reference numeral at line 10 (i.e., "135"). Appellants respectfully request that correction of this error be held in abeyance until the decision of this appeal on the merits, at which time, Appellant will correct this error in accordance with the Board's decision on this appeal.

**(V) SUMMARY OF CLAIMED SUBJECT MATTER**

Each independent claim, each dependent claim argued separately, and each claim having means plus function language is summarized below including exemplary reference(s) to page and line number(s) of the specification.

1. A method of generating a concept dictionary for use in querying an information system comprising:

(i) receiving an information search criterion [Fig. 2, ref. no. 200; page 11, lines 6-7];

(ii) deriving from said received search criterion, using a lexical reference source, at least one different search criterion having related meaning to said received search criterion [Fig. 2, ref. no. 205; page 11, lines 7-19];

(iii) identifying a set of information in said information system relevant to said received search criterion and a different set of information in said information system relevant to said at least one derived search criterion [Fig. 2, ref. nos. 201, 215; page 11, lines 20-33];

(iv) analyzing the identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion in the context of said information system [Fig. 2, ref. nos. 220, 225; page 11, line 33 to page 12, line 21]; and

(v) storing, in a concept dictionary, information relating to said received and said at least one derived search criterion and to respective said derived relationships



therebetween, for use in querying said information system [Fig. 2, ref. no. 230; page 12, lines 22-24].

11. An information retrieval apparatus for accessing sets of information stored in an information system, said apparatus comprising;

an input for receiving an information search criterion [Fig. 1, ref. no. 110; page 4, lines 9-11];

deriving means for deriving from said received search criterion, using a lexical reference source, at least one different search criterion having related meaning to said received information search criterion [Fig. 1, ref. nos. 105, 115; page 4, lines 11-17];

retrieval means for identifying a set of information in said information system relevant to said received search criterion and a different set of information in said information system relevant to said at least one derived search criterion [Fig. 1, ref. no. 120, 125; page 4, lines 18-25];

analysis means (135) for analyzing said identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion in the context of said information system [Fig. 1, ref. nos. 135, 140; page 4, line 26 to page 5, line 15];  
and

updating means for storing, in a concept dictionary, information relating to said received and said at least one derived search criterion and to respective said derived

" MARTIN et al  
Serial No. 10/549,365

relationships therebetween, for use in querying said information system [Fig. 1, ref. no.  
140; page 5, lines 16-25].

**(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-11 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication 2003/0033288 to Shanahan et al. ("Shanahan").

(VII) ARGUMENT

Appellant's invention is directed to methods and an apparatus for generating and updating a concept dictionary in respect of an information system and for using that concept dictionary to assist in selecting queries and query terms for use in interrogating the information system. A lexical reference source is used to generate queries semantically related to a query entered by a user, and the answers returned for each query are analyzed to determine semantic relationships between the queries. A key element of Appellant's invention is the analyzing limitation:

. . . analyzing the identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion in the context of said information system . . .

See independent claims 1 and 11 (emphasis supplied). According to the Appellant's "analyzing" element, relationships between a "received search criterion" and a "derived search criterion" are derived *from looking at similarities and differences between the respective sets of information identified using the respective search criteria* – rather than simply from comparing the respective search criteria.

The Examiner in the Final Office Action and the Advisory Action cites to paragraphs [0513], [0527], and [0366] and the Abstract of Shanahan for disclosing this key element of Appellant's invention. See Final Office Action at pages 3- 4 and Advisory Action at paragraph 11.

Paragraph [0513] is associated with Figure 51 of Shanahan which shows and describes a flow chart of the auto-correcting feature of the disclosed system.

When a word has not been previously corrected at 5144, then a query for the word is formulated at 5146. Formulating a query involves generating a query string that includes context information obtained from content that surrounds the word in the text object. At 5148, the query is submitted to the entity database 4214. The results from the query are ranked at 5150, from which the highest ranked results are selected at 5152. Ranking techniques are described in section E.2 above.

Nowhere in the flow chart of Figure 51 nor the description of the flow chart in paragraph [0513] is there any mention or even a suggestion of “analyzing identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion” as required by independent claims 1 and 11. Rather, as explicitly stated in paragraph [0513] “the query is submitted to the entity database” and “results from the query are ranked.” The cited portion of Shanahan does not disclose that an analysis is conducted on “identified sets of information and deriving from similarities and differences” – between the sets of information – “relationships between the received search criterion and the at least one derived search criterion,” as required by the present claims. The cited portion of Shanahan only mentions a single “query” and that the “results from the query are ranked.” Thus, it is clear that paragraph [0513] of Shanahan does not disclose (or even suggest for that matter) this claim element.

Paragraph [0527] of Shanahan also does not teach (or even suggest) this claim limitation.

In alternate embodiments, ranking criteria may also include an alphabetical ordering, a predefined user specified ordering, a quality ordering (i.e., rank those information providers that provide the highest quality service first, independent of cost), preferred customer ordering, and

privacy ordering (i.e., rank those information providers with the best privacy policy first). In yet another embodiment, multiple ranking criteria can be selected and ordered at 5318 and later used to select which of the information providers specified at 5310 to first carry out the directed search.

This cited portion of Shanahan describes alternative embodiments for ranking information providers to be used in carrying out the directed search. See also Shanahan at paragraph [0526] and Figure 53. Such a ranking of information providers has nothing to do with “analyzing identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion” as required by the present claims.

Nor does cited paragraph [0366] teach or suggest this element of the present claims.

Subsequently, the approximate reasoning module 3618 accesses a knowledge base 3622 that records variables (i.e., document features and associated frequencies) that are used to define a function that models the mapping from the document 3612, or its transformed representation 3624, to a class in an ontology. One specific embodiment of such a knowledge base is represented using a set of rules that describe relationships between the recorded variables. Typically each class is represented by one rule. In mapping the function, the inference engine 3618 matches the document with each class rule stored in knowledge base 3622 and uses a decision maker for drawing conclusions as to which action to rely on.

The text of paragraph [0366] is associated with Figure 36 of Shanahan which shows and describes a “Categorizer” which has nothing to do with “analyzing identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion” as

required by the present claims. See also Shanahan at paragraphs [0360] to [0365] and Figure 36.

The Abstract of Shanahan is directed to describing the auto-completion and auto-correction features of the disclosed system, and nowhere is there mentioned "analyzing identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion" as required by the present claims.

Other paragraphs in Shanahan that the Examiner appears to believe are relevant are paragraphs [0143], [0158 to 0160], [0282 to 0290], [0305], [0476], [0540 to 0555], and [0574 to 0577]. See Final Office Action at page 3. The most relevant of these appear to be paragraphs [0282 to 0290], as these do relate to producing a second "question" from a first "question" and, apparently, the Examiner is equating the first and second questions of Shanahan with the "received search criterion" and "at least one other search criterion" of the present claims. But the "first and second questions" in Shanahan are not then used for the same purposes as the "received search criterion" and "at least one other search criterion" required by the present claims.

In Shanahan, the process may be used for expanding or generalizing the scope of the "first question" but this is done already with the knowledge that one or more words or expressions (e.g. "SURGICAL PROCEDURE" or "BODY ORGAN") in the "second question" are more generic than the corresponding words or expressions (e.g. "ABLATION" or "KIDNEY") in the "first question." There is simply no disclosure in Shanahan of analyzing information identified as a result of processing the "first and second questions" in order to determine relationships between the questions

themselves, as there is required for the "received search criterion" and "at least one other criterion" in the present claims. To support the Examiner's finding of anticipation, it would have been necessary for Shanahan to have taught a method and/or apparatus involving the same process, being carried out in respect of its first and second questions, as Appellant's method (and apparatus) carries out in respect of the "*received search criterion*" and the "*at least one different search criterion.*" As clearly demonstrated above, Shanahan teaches no such method or apparatus.

Accordingly, independent claims 1 and 11 and dependent claims 2-10 patentably define over Shanahan which does not teach (or even suggest) the above described key claim element.

### CONCLUSION

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

Respectfully submitted,

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**(VIII) CLAIMS APPENDIX**

1. A method of generating a concept dictionary for use in querying an information system comprising:

- (i) receiving an information search criterion;
- (ii) deriving from said received search criterion, using a lexical reference source, at least one different search criterion having related meaning to said received search criterion;
- (iii) identifying a set of information in said information system relevant to said received search criterion and a different set of information in said information system relevant to said at least one derived search criterion;
- (iv) analyzing the identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion in the context of said information system; and
- (v) storing, in a concept dictionary, information relating to said received and said at least one derived search criterion and to respective said derived relationships therebetween, for use in querying said information system.

2. A method as in Claim 1, wherein, at step (i), receiving an information search criterion comprises selecting an information search criterion stored in said concept dictionary.

3. A method as in Claim 1, wherein, at step (ii), deriving at least one search criterion having related meaning comprises replacing a term of said received search criterion with a related term having a more specific meaning according to said lexical reference source.

4. A method as in claim 1, wherein, at step (ii) deriving at least one search criterion having related meaning comprises replacing a term of said received search criterion with a related term having a more general meaning according to said lexical reference source.

5. A method as in claim 1, wherein, at step (ii) deriving at least one search criterion having related meaning comprises replacing a term of said received search criterion with a related term having an equivalent meaning according to said lexical reference source.

6. A method as in claim 1, wherein, at step (ii), said lexical reference source is a thesaurus.

7. A method as in claim 1, wherein, at step (ii), said lexical reference source is an ontological database.

8. A method as in claim 1, wherein, at step (ii), a plurality of search criteria are derived, each having related meaning to said received search criterion, and wherein at step (iv), the respective identified sets of information are analyzed to derive

relationships between search criteria comprised in said plurality of derived search criteria.

9. A method as in claim 1, wherein, at step (iv), deriving relationships between said search criteria comprises performing fuzzy processing of said derived search criteria and respective said identified sets of information to determine a measure of the and/or of one said search criterion over another in the context of said information system.

10. A method of accessing sets of information stored in an information system using information search criteria stored in a concept dictionary generated for the information system according to the method in claim 1, further comprising:

- (a) selecting a first information search criterion;
- (b) using a search engine to identify one or more sets of information in the information system relevant to said first information search criterion; and
- (c) selecting at least one further information search criterion from search criteria stored in the concept dictionary, semantically related to said first information search criterion according to information stored in the concept dictionary, according to whether a more general, a more specialized or an equivalent search is required.

11. An information retrieval apparatus for accessing sets of information stored in an information system, said apparatus comprising;

an input for receiving an information search criterion;

deriving means for deriving from said received search criterion, using a lexical reference source, at least one different search criterion having related meaning to said received information search criterion;

retrieval means for identifying a set of information in said information system relevant to said received search criterion and a different set of information in said information system relevant to said at least one derived search criterion;

analysis means (135) for analyzing said identified sets of information and deriving from similarities and differences therebetween relationships between said received search criterion and said at least one derived search criterion in the context of said information system; and

updating means for storing, in a concept dictionary, information relating to said received and said at least one derived search criterion and to respective said derived relationships therebetween, for use in querying said information system.

MARTIN et al  
Serial No. 10/549,365

(IX) **EVIDENCE APPENDIX**

None.

MARTIN et al  
Serial No. 10/549,365

(X) RELATED PROCEEDINGS APPENDIX

None.